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(54) Retrievable radiation source carrier.

(57) A retrievable radiation source carrier assembly (100) for a logging while drilling tool is disclosed. The carrier includes a solid rod or member (140) of high strength and low elastic modulus that connects the housings (124,144) of at least two radiation sources (116,146). In a preferred embodiment, the carrier includes a sheath (152) of high performance thermoplastic that covers the rod from the upper source to the lower source. The sheath provides the carrier with a smooth outer surface and a substantially constant diameter that resists the accumulation of mud particulate buildup thereon. The sheath also provides a low friction surface which allows improved ease of insertion and removal of the radiation source carrier into and from the internal source passageway (84) of the LWD tool. In another preferred embodiment, the source carrier's end cap (108) disposed above the upper source is provided with a drilling fluid path (158,160,170) that provides drilling fluid pressure equalization between the interior of the LWD tool and the source passageway in which the carrier assembly is placed. The pressure equalization path includes a gravity trap for substantially preventing particulates found in the drilling fluid from entering the source passageway and settling around the source carrier assembly.

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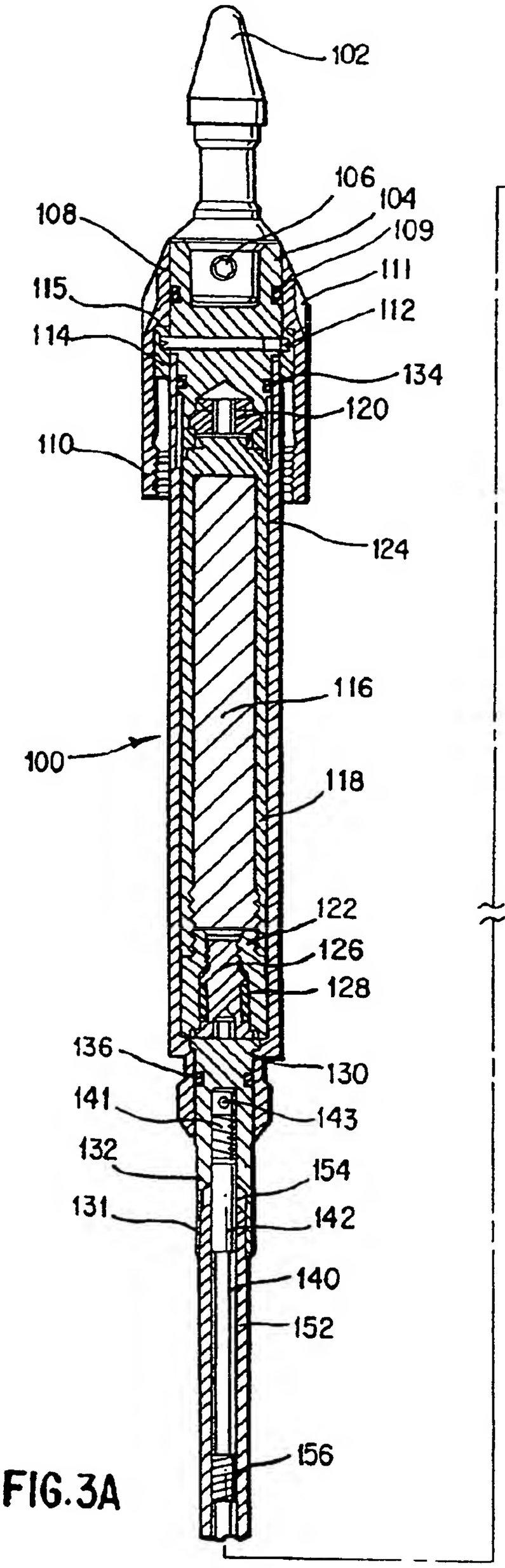

FIG.3A

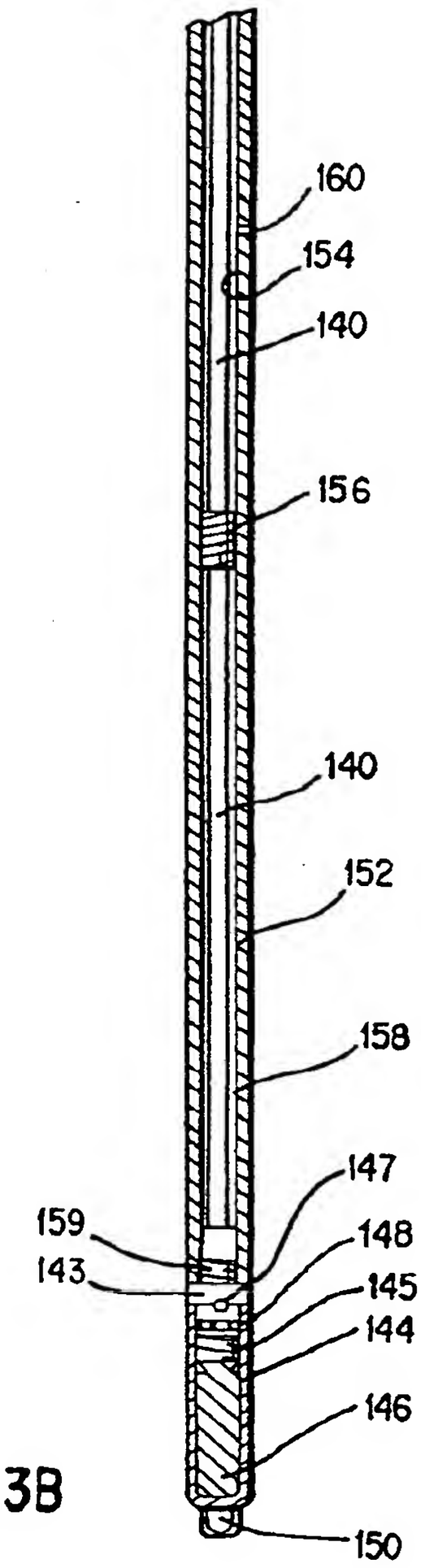

FIG.3B

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EUROPEAN SEARCH REPORT

Application Number

EP 92 40 0702

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A,D	US-A-4 814 609 (WRAIGHT) * column 8, line 52 - line 58 * ---	1	E21B47/00 E21B23/02 G01V5/08
A,D	US-A-4 879 463 (WRAIGHT) * column 7, line 66 - column 8, line 6 * * column 8, line 40 - line 44 * * column 8, line 68 - column 9, line 6 * ---	1	
A,D	US-A-4 845 359 (WRAIGHT) * column 4, line 15 - line 22 * ---	1	
A	US-A-4 633 248 (SMALL) * column 4, line 24 - line 26 * * column 3, line 10 - line 12 * ---	3	
A	US-A-4 569 392 (PETERMAN) * abstract * -----	4	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

E21B
G01V

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	30 DECEMBER 1992	SOGNO M.G.

EPO FORM 1503 03.82 (P0401)

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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